

CLAIMS

1. A continuously variable ratio transmission unit ("variator") comprising a housing, a first input/output disc pair defining a first variator cavity, a second input/output disc pair defining a second variator cavity, the discs being mounted to the housing for rotation about a common variator axis, at least one first roller disposed in the first variator cavity and at least one second roller disposed in the second variator cavity, the rollers serving in use to transmit drive between the input and output discs, a first actuator for applying a biasing force to the first roller and a second actuator for applying an adjustable biasing force to the second roller, wherein the first actuator is coupled to a first carrier part, the housing and the first carrier part being formed such that the first carrier part can be mated with the housing by introducing the first carrier part to the housing along a direction substantially parallel to the variator axis, and the second actuator is coupled to a second carrier part, the housing and the second carrier part being formed such that the second carrier part can be mated with the housing by introducing the second carrier part to the housing along a direction non-parallel to the variator axis.

2. A variator as claimed in claim 1 comprising at least three second rollers each acted on by a respective second actuator, wherein the second actuators all lie on the same side of a notional plane containing the variator axis.

3. A variator as claimed in claim 2 comprising at least three first rollers each acted on by a respective first actuator, wherein the first actuators are angularly spaced about the variator axis and are thus disposed to either side of the said plane.

4. A variator as claimed in claim 2 or claim 3 wherein the second actuators

comprise actuator housings which are co-planar.

5. A variator as claimed in claim 3 or claim 4 wherein the first actuators are spaced at equal angular intervals about the variator axis.

6. A variator as claimed in any preceding claim wherein the actuators are hydraulic and the first carrier part comprises a plate lying around the variator axis, circumferentially extending fluid supply conduits being formed in or adjacent said plate for feeding fluid to/from the first actuators.

7. A variator as claimed in claim 6 wherein a back plate lies adjacent the first carrier part, the fluid supply conduits being formed between faces of the first carrier part and the back plate.

8. A variator as claimed in any preceding claim wherein the housing provides an axially facing recess which receives the first carrier part.

9. A variator as claimed in any preceding claim wherein the housing provides a radially facing recess which receives the second carrier part.

10. A method of constructing a continuously variable ratio transmission unit (“variator”) comprising a housing, a first input/output disc pair defining a first variator cavity, a second input/output disc pair defining a second variator cavity, the discs being mounted to the housing for rotation about a common variator axis, at least one first roller disposed in the first variator cavity and at least one second roller disposed in the second variator cavity, a first actuator for applying a biasing force to the first roller and a second actuator for applying an adjustable biasing force to the second roller, the method comprising constructing the first actuator on a first carrier part and advancing the first carrier part in a direction along the variator axis to

thereby mate the first carrier part to the housing, constructing the second actuator on a second carrier and advancing the second carrier part along a direction non-parallel to the variator axis to thereby mate the second carrier part to the housing.

11. A continuously variable transmission unit substantially as herein described with reference to, and as illustrated in, the accompanying drawings.